

REMARKS/ARGUMENTS

Applicant responds herein to the final Office Action mailed June 7, 2011 in the above-identified patent application.

New claim 14 is added. Therefore, claims 1-11, 13 and 14 are the claims currently pending in the present application.

Claim 1 is amended to clarify features recited thereby. These amendments are fully supported by Applicant's disclosure see, for example, Specification, page 6, lines 7-11 and Fig. 1 showing that the return line terminates at the first position.

Rejection of Claims 1-11 and 13 under 35 U.S.C. § 103

Claims 1-11 and 13 are rejected under 35 U.S.C. § 103 as being obvious from Brookshire et al., U.S. Patent No. 7,013,879 in view of Aupperle et al., U.S. Patent Application Publication No. 2004/0050374 and Zurawski et al., U.S. Patent No. 6,601,387. Reconsideration of this rejection is respectfully requested.

The following discussion of advantages or effects provided according to an aspect of Applicant's invention as claimed in claim 1 is provided by way of illustrative example but in no way limits the scope of the claims. An advantage or effect according to an aspect of Applicant's invention as claimed in claim 1 addresses the problem that an EGR cooler connected to the cooling system of the engine cannot cool the exhaust gases to a lower temperature than a temperature of the engine coolant, and therefore, a mixture of exhaust gases and air led to the combustion engine will be at a higher temperature than the compressed air led to the supercharged combustion engine that does not make use of exhaust gas recirculation, as explained, for example, at Specification, page 1, line 26-page 2, line 5. According to an aspect of Applicant's invention as claimed in claim 1, therefore, exhaust gases are first cooled in the return line and then mixed with the fresh air after the return line connects with the inlet line, and this mixture is then cooled by an air cooler downstream from the connection of the return line to the inlet line before being delivered to the combustion engine.

Claim 1 requires an arrangement for recirculation of exhaust gases in a supercharged combustion engine, the arrangement comprising an inlet line to lead first air to the combustion engine, a return line comprising a connection to the inlet line at a first position of the inlet line

and configured to recirculate the exhaust gases from the exhaust line to the first position of the inlet line downstream of the compressor with respect to the direction of a movement of the first air, the return line terminating at the first position, a liquid-medium cooler for cooling only the exhaust gases in the return line by the use of a liquid medium, and an air cooler cooled by ambient air, the air cooler being incorporated in the inlet line downstream from the connection of the return line to the inlet line so that the air cooler cools a mixture of exhaust gases and the first air before the mixture is led to the combustion engine.

Brookshire discloses an EGR system for use with a turbo charged engine having one or two EGR loops (Brookshire, Abstract) and at Fig. 8 discloses an air inlet provided with compressor first stage 188, and a return line 182 that provides exhaust gas through control valve 184. Brookshire discloses that the exhaust gases are mixed with the fresh air and passed through charge air/EGR cooler CAC/EGRC 190 before being passed through compressor second stage 192 and through air/air charge air cooler (CAC) 194 and then to the intake manifold 170 of the engine. (Brookshire, column 8, lines 24-44; Fig. 8). Thus, Brookshire discloses that exhaust gases are mixed with the fresh air before being provided to charge air/EGR cooler 190.

Brookshire and the cited art do not disclose or suggest a return line comprising a connection to the inlet line at a first position of the inlet line, the return line terminating at the first position, and a liquid-medium cooler operable to cool only the exhaust gases in the return line, as required by claim 1. Further, the cited art does not disclose or suggest that such a liquid-medium cooler for cooling only the exhaust gases in the return line cools by use of liquid medium, as further required by claim 1. That is, as discussed, Brookshire discloses that the exhaust gases and the fresh air are mixed at a mixing point before being passed to CAC/EGRC 190.

The remaining references, including Aupperle and Zurawski, do not disclose or suggest such features. Further, the Office Action does not allege that Aupperle and Zurawski disclose or suggest such features. Accordingly, the cited art does not disclose or suggest the recitations of claim 1.


Claims 2-11 and 13 depend from claim 1, and are therefore patentably distinguishable over the cited art for at least the same reasons.

In view of the foregoing discussion, withdrawal of the rejection and allowance of the claims of the present application are respectfully requested.

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